FS-89-00-14

FEASIBILITY STUDY

NC 150 Mooresville Bypass
From NC 115 to NC 152, Iredell County
FS-890014

Prepared by
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6-6-89
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NC 150 Mooresville Bypass
From NC 115 to NC 152, Iredell County

I. DESCRIPTION

This report covers a preliminary study of possible improvements to the subject road for a distance of approximately 3.0 miles. Improvement to this road would be an extension of the planned five-laning of NC 150 from I-77 to NC 152 scheduled for construction in Fiscal Year 1993 (R-2226) and from NC 152 to NC 115 scheduled for construction in FY 1990 (U-2213). Location of the studied and planned projects is shown on Figure 1. This study was made in response to a legislative request for improving the remaining portion of the NC 150 Mooresville Bypass to NC 152.

II. EXISTING CONDITIONS

Route Characteristics

NC 150 is designated as a major thoroughfare in the Mooresville Thoroughfare Plan and serves as an arterial route in the Iredell County Functional Classification Plan.

Presently, this portion of NC 150 is a two-lane facility with 24 feet of pavement and 10-foot grassed shoulders. It is constructed on good alignment through rolling terrain. Existing speed limit on NC 150 is 45 mph for about 0.3 mile eastward from NC 115 and 55 mph on the remainder of the project length.

Signal controls exist at the intersections of NC 115, a spur railroad track just east of NC 115, a mainline track of Southern Railroad, and NC 801. Each railroad crossing also has gates for added protection. The Southern Railway track currently serves about 4 trains per day.

Roadside development is primarily residential interspersed with commercial and light industrial uses. The density of development is generally light to medium.

Traffic Volumes, Capacity, and Accident Experience

Present traffic volumes on the studied highway range from 5000 vehicles per day near NC 152 to 7000 vpd at NC 115. Estimated year 2010 traffic volumes are 9,000 and 13,000 vpd, respectively. These volumes include approximately 3% truck tractor semi trailers and 3% dual tired trucks.

Capacity of the existing road is approximately 5000 vpd at desirable level of service (LOS) C and 8000 vpd at minimum tolerable LOS D. Thus, the studied road is generally operating between LOS C and D. With no improvements, however, the facility would be expected to experience intolerable LOS F conditions by year 2010.

Traffic records for a recent 4-year period of 1985-88 revealed that 83 accidents occurred on the subject road. The accident experience produced an accident rate of 3.7 accidents per million vehicle miles (ACC/MVM). This is significantly more than the 1988 statewide average rate of 2.2 ACC/MVM for two-lane NC route in rural areas. Predominant accident patterns were rear end (29%), left turn (19%) and angle (25%) collisions.

III. STUDIED IMPROVEMENTS AND COSTS

The logical improvement to NC 150 is widening of the existing road to a 5-lane section. No other alternative improvements were considered.

Recommended cross sections for the widening are as follows:

Section A (NC 115 to SR 2445, 0.3 mile) - 64 feet face to face of curbs on an estimated 100-foot right of way. An urban type section is appropriate for this area of increased development and reduced speed limit. It also matches the planned 5-lane curbed section west of NC 115.

Section B (SR 2445 to NC 152, 2.7 miles) - 60 feet of pavement with minimum 8-foot shoulders, including 2 feet of pavement, on an estimated 130-foot right of way plus easements. A five-lane shoulder section is considered appropriate for this section of road that allows higher speeds. Use of curb and gutter on high speed roads should be avoided for safety reasons.

Total estimated cost of the studied improvements is as follows:

Roadway	$5,250,000
Right of Way	3,300,000
Total	$8,550,000

The right of way cost is based on acquiring additional 60 feet of right of way on Section A and 90 feet of right of way on Section B. Existing right of way is approximately 40 feet which is the width maintained by the State. To obtain cost estimates for right of way, symmetrical widening is assumed for the most part. Approximately 2 residences and 4 businesses may be affected by the recommended improvement.

IV. CONCLUSIONS

The NC 150 segment between NC 115 and NC 152 is operating at LOS C/D. If traffic volumes grow as predicted, a serious capacity deficiency will result before the end of the planning period. The capacity deficiency can only be eliminated by providing additional lanes. In addition, the accident history along this facility has been unfavorable. Provision of additional lanes should improve safety.

The studied improvement would provide additional continuity of a five-lane section already slated for construction in the near future on approximately 3 miles of NC 150 west of NC 115 to I-77. Thus, for this and the above reasons, this improvement to NC 150 merit consideration for possible inclusion in the Transportation Improvement Program.

RGD/wp

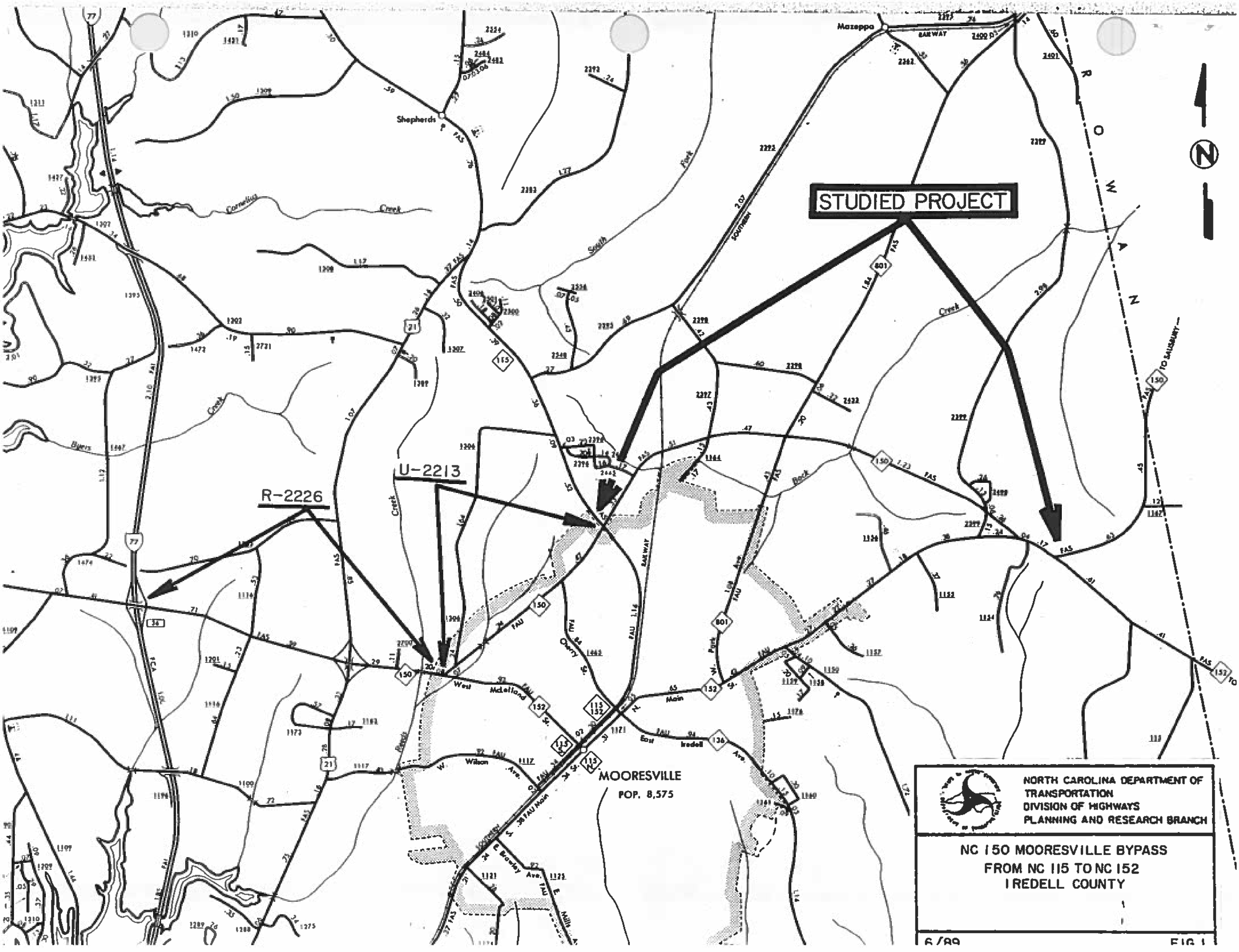
STUDIED PROJECT
U-2213
R-2226
MOORESVILLE
POP. 8,575
Mazeppa
Shepherds
ROWAN
TO SALISBURY
Cornelius Creek
South Fork
Rocky Creek
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH
NC 150 MOORESVILLE BYPASS
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FIG 1